(3) Derivation of Formula for Calculating Electron Trajectories. For development of the above formula, all terms of Eq. (13) are determined first; then the final equation is written as:

$$\delta(t)=\frac{1}{c^4}\Big[\{\delta_0'(c_n^2\sin[(n+\beta)(t-t_0)]+c_{n-2}c_n\sin[(n+\beta)(t-t_0)+2t_0]+$$
$$+c_{n+2}c_n\sin[(n+\beta)(t-t_0)-2t_0]+c_nc_{n-2}\sin[(n+\beta-2)(t-t_0)-2t_0]+$$
$$+c_nc_{n+2}\sin[(n+\beta+2)(t-t_0)+2t_0]\}+\{\delta_0c_n^2(n+\beta)+c_n^2A_0-$$
$$-c_nc_{n-2}D_{-1}-c_nc_{n+2}B_1\}\cos[(n+\beta)(t-t_0)]+\{\delta_0c_{n-2}c_n(n+\beta-2)-$$
$$-c_n^2B_0+c_nc_{n-2}A_{-1}\}\cos[(n+\beta)(t-t_0)+2t_0]+$$
$$+\{\delta_0c_{n+2}c_n(n+\beta+2)-c_n^2D_0+c_nc_{n+2}A_1\}\cos[(n+\beta)(t-t_0)-2t_0]- \quad (37)$$
$$-c_nc_{n-2}B_{-1}\cos[(n+\beta)(t-t_0)+4t_0]-c_nc_{n+2}D_1\cos[(n+\beta)(t-t_0)-$$
$$-4t_0]-c_nc_{n-2}B_0\cos[(n+\beta-2)(t-t_0)]+\{\delta_0c_nc_{n-2}(n+\beta)+$$
$$+c_nc_{n-2}A_0\}\cos[(n+\beta-2)(t-t_0)-2t_0]-c_nc_{n-2}D_0\cos[(n+\beta-2)\times$$
$$\times(t-t_0)-4t_0]-c_nc_{n+2}D_0\cos[(n+\beta+2)(t-t_0)]+\{\delta_0c_nc_{n+2}(n+\beta)+$$

$$+ c_n c_{n+2} A_0^*) \cos[(n+\beta+2)(t-t_0)+2t_0] - c_n c_{n+2} B_0 \cos[(n+\beta+2)\times$$
$$\times (t-t_0)+4t_0] + [-c_n^2 A_0 + c_n c_{n-2}(D_{-1}+B_0) + c_n c_{n+2}(B_1+D_0)] +$$
$$+ (c_n^2(B_0+D_0) - c_n c_{n-2}(A_0+A_{-1}) - c_n c_{n+2}(A_0+A_1))\cos 2t +$$
$$+ (c_n c_{n-2}(D_0+B_{-1}) + c_n c_{n+2}(B_0+D_1))\cos 4t]. \qquad (37)$$

Here, $t \geqslant t_0$ This equation determines the trajectory of any paraxial electron for any conditions of electron entrance into the magnetic field, and for any condition of stability of Mathieu's equation. Equation (37) is somewhat cumbersome, but it can be reduced to simple forms for specific cases. (4) Specific Case. The electron enters the periodic magnetic field at a point of maximum value, e.g., in accordance with (2), (4) at $z = z_0 = L/4$ and $t_0 = \pi/2$. Substituting this value of t_0 into (37), and after certain trigonometric modifications, it will take the shape of:

$$\delta(t) = \delta_{sn} \sin\left[(n+\beta)\left(t-\frac{\pi}{2}\right)\right] + \delta_{sn-2} \sin\left[(n+\beta-2)\left(t-\frac{\pi}{2}\right)\right] +$$

$$+ \delta_{sn+2} \sin\left[(n+\beta+2)\left(t-\frac{\pi}{2}\right)\right] + \delta_{cn} \cos\left[(n+\beta)\left(t-\frac{\pi}{2}\right)\right] +$$

$$+ \delta_{cn-2} \cos\left[(n+\beta-2)\left(t-\frac{\pi}{2}\right)\right] + \delta_{cn+2} \cos\left[(n+\beta+2)\left(t-\frac{\pi}{2}\right)\right] +$$

$$+ \delta_n + \delta_2 \cos 2t + \delta_4 \cos 4t \qquad (38)$$

which can be abbreviated as:

$$\delta(t) = \delta_n + \sum_{r=-1}^{r=+1} \delta_{s2r+n} \sin\left[(2r+n+\beta)\left(t-\frac{\pi}{2}\right)\right] +$$

$$+ \sum_{r=-1}^{r=+1} \delta_{c2r+n} \cos\left[(2r+n+\beta)\left(t-\frac{\pi}{2}\right)\right] + \delta_2 \cos 2t + \delta_4 \cos 4t. \qquad (39)$$

Here:

$$\delta_{sn} = \frac{1}{c^2} \delta_0' \left[c_n^2 - c_n (c_{n-2} + c_{n+2})\right]; \qquad (40)$$

$$\delta_{cn-2} = -\frac{1}{c^3}\delta_0 c_n c_{n-2}; \quad (41)$$

$$\delta_{cn+2} = -\frac{1}{c^3}\delta_0 c_n c_{n+2}; \quad (42)$$

$$\delta_{cn} = \frac{1}{c^3}(\delta_0[c_n^2(n+\beta) - c_{n-2}c_n(n+\beta-2) - c_{n+2}c_n(n+\beta+2)] + \\ + c_n^2(A_0 + B_0 + D_0) - c_n c_{n-2}(A_{-1} + B_{-1} + D_{-1}) - \\ - c_n c_{n+2}(A_1 + B_1 + D_1)); \quad (43)$$

$$\delta_{cn-2} = -\frac{1}{c^3}c_n c_{n-2}[\delta_0(n+\beta) + A_0 + B_0 + D_0]; \quad (44)$$

$$\delta_{cn+2} = -\frac{1}{c^3}c_n c_{n+2}[\delta_0(n+\beta) + A_0 + B_0 + D_0]; \quad (45)$$

$$\delta_{11} = \frac{1}{c^3}[-c_n^2 A_0 + c_n c_{n-2}(D_{-1} + B_0) + c_n c_{n+2}(B_1 + D_0)]; \quad (46)$$

$$\delta_2 = \frac{1}{c^3}[c_n^2(B_0 + D_0) - c_n c_{n-2}(A_0 + A_{-1}) - c_n c_{n+2}(A_0 + A_1)]; \quad (47)$$

$$\delta_4 = \frac{1}{c^3}[c_n c_{n-2}(D_0 + B_{-1}) + c_n c_{n+2}(B_0 + D_1)]; \quad (48)$$

$$c^3 = c_n^2(n+\beta) - 2[c_n c_{n-2}(n+\beta-1) + c_n c_{n+2}(n+\beta+1)]. \quad (49)$$

Calculation of Electron Trajectories in the Periodic Focusing Element of a Traveling-Wave Tube

77777
SOV/109-5-2-10/26

A numerical example is worked out and the results presented graphically. Conclusion: The above method is based on an approximate solution of the nonuniform equation of Mathieu: The completed calculations show the comparative ease of completing them. The method permits evaluation of the precision without additional calculations. There are 2 figures; and 3 references, 1 Soviet, 2 U.S. The U.S. references are: A. M. Clogston, H. Heffner, Focusing of an Electron Beam by Periodic Fields, J. Appl. Phys., 1954, 25, 4, 436; K. K. N. Chang, Beam Focusing by Periodic and Complementary Fields, Proc. I. R. E., 1955, 43, 1, 62.

SUBMITTED: January 6, 1959

Card 11/11

83267

9.4230 1052 1071

S/109/60/005/009/013/026
E140/E455

AUTHOR: Igritskiy, A.L.

TITLE: Scatter in the Parameters of a Periodic Focusing System and its Effect on the Focusing of Electron Beams in TWT's

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.9, pp.1467-1474

TEXT: It is assumed that the scatter in the space period of the magnetic field is very small and has no substantial influence on the focus of the equipment. The work is therefore confined to a theoretical study of scatter in the amplitude of the magnetic field induction as it effects the electron beam focusing. The magnetic field is assumed sinusoidal with a single halfwave disturbance of the amplitude

$$B_z = (B_{zo} + \Delta B) \sin\left(\frac{2\pi}{L} z\right)$$

whereby $\Delta B \ll B_{zo}$. It is found that a disturbance of only 5% leads to an increase in the beam ripple of 70% (Fig.1, curve 2).

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83267

S/109/60/005/009/013/026
E140/E455

Scatter in the Parameters of a Periodic Focusing System and its Effect on the Focusing of Electron Beams in TWT's

A current passage capacity of 90% may be obtained only if the variations in maximum values of the periodic magnetic field does not exceed 4.5%. There are 1 figure and 2 Soviet references.

SUBMITTED: July 20, 1959

Card 2/2

S/057/60/030/04/04/009
B004/B002

AUTHOR: Igritskiy, A. L.

TITLE: Optimum Focussing of an Electron Beam Within the Range of Passage Through an Input ЛБВ (LBV) Waveguide With a Periodic Magnetic Field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol. 30, No. 4, pp. 413-423

TEXT: The scheme of the ЛБВ (LBV) tube for focussing by means of a periodic magnetic field is shown in Fig. 1. The author describes the differential equation (1) for the electron path within the range of passage through LBV . The distribution of the magnetic induction within the range of passage (Fig. 2) is calculated by means of Fourier series. Equation (15), a nonuniform Hill differential equation, is obtained from equation (1). The former is integrated. Equation (31) is obtained in the first, and equation (32) in the second approximation, from them the waviness of the electron beam can be determined. The author suggests his own method of waviness reduction. In equation (31) he makes the first

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summand equal zero (equation 41). Equation (46) shows that under condition (41), the electron paths are parallel when leaving the tube. It also shows that the electron oscillations within the range of passage may be reduced to half their intensity by means of this method. The configuration of the magnetic field on the passage through the waveguide is determined. From the system of equations (41), (48), (49), (50) the coefficients of the quadrinomial (47) are calculated, and equation (56) of the fourth order is obtained and can be graphically solved. The author found out that the magnetic field of the passage through the waveguide acts like a transformer and thus allows any variation in the electron beam cross section. Since at present there are no data available for the configuration of the magnetic field in the range of the electron gun, the magnetic field found experimentally is assumed for this range, and the electromagnet is calculated, which guarantees the desired magnetic field in the range of the electron gun and on the passage through the waveguide. There are 2 figures and 7 references: 4 Soviet, 2 British, and 1 German.

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Optimum Focussing of an Electron Beam Within the Range of Passage Through an Input ЛБВ (LBV) Waveguide With a Periodic Magnetic Field

S/057/60/030/04/04/009
B004/B002

ASSOCIATION: Leningradskiy elektrotekhnicheskiy institut im. V. I. Ul'yanova (Lenina) (Leningrad Institute of Electrical Engineering imeni V. I. Ul'yanov (Lenin))

SUBMITTED: June 24, 1959

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Card 3/3

21437
S/109/61/006/001/016/023
E140/E163

9.4230

AUTHOR: Igritskiy, A.L.

TITLE: Optimal focussing of the electron beam in a periodic TWT focussing system

PERIODICAL: Radiotekhnika i elektronika, Vol.6, No.1, 1961, pp. 137-145

TEXT: An analytical method for determining the parameters of a periodic TWT focussing structure is proposed which is claimed to give appreciably smaller ripple of the electron beam than that given by Chang's method (Ref.1). As in Chang's method the starting point is the equation derived for the electron beam ripple:

$$\delta(t) = \left[\frac{b}{a} + \frac{2q}{a-4}\right]\cos\left[\sqrt{a}\left(t - \frac{\pi\tau}{2}\right)\right] - \frac{b}{a} + \frac{2q}{a-4}\cos 2t \qquad (11)$$

In Chang's method the coefficient b is taken equal to zero and the quantity q is reduced as far as possible by taking the magnetic field period L as small as possible. In the present method the system parameters are taken such that:

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Optimal focussing of the electron beam in a periodic TWT focussing system

$$\frac{2q}{a - 4} = - \frac{b}{a} \qquad (15)$$

The basic advantages claimed for the proposed method are as follows. (1) The electron beam ripple is substantially smaller, which is particularly important for the development of low-noise TWT. (2) The method gives the possibility of obtaining a prescribed regular beam configuration. If the electron beam enters the periodic field at maximum induction the radius of the beam cannot exceed its radius at the input.
There are 5 figures and 2 references: 1 Soviet and 1 English.

SUBMITTED: August 5, 1959

Card 2/2

9,4230

S/109/61/006/002/013/023
E140/E435

AUTHOR: Igritskiy, A.L.

TITLE: Design of a Periodic Magnetic Focusing System for TWT

PERIODICAL: Radiotekhnika i elektronika, 1961, Vol.6, No.2, pp.275-285

TEXT: A periodic magnetic system of the type shown in Fig.1 is analysed, taking into account the reluctance of the pole pieces, thus giving a more exact result than previous methods (Ref.1: K.K.N.Chang, Optimum design of periodic magnet structures for electron beam focusing, RCA Rev., 1955, 16, 1, 65: Ref.2: F.Sterzer, W.W.Siekanowicz, The design of periodic permanent magnets for focusing of electron beams, RCA Rev., 1957, 18, 1, 39). The method consists of successive approximations, in which the first approximation is taken identical with a previously proposed method, neglecting the reluctance of the pole pieces. In the second approximation this is already taken into account, and the division of the field between the leakage flux exterior to the system and the useful flux passing through the pole pieces is calculated, (Fig.3). The equivalent circuit of a single magnet (Fig.4) and the entire periodic structure (Fig.5) is derived,

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and the end effects taken into account. The method permits also taking into account disturbances of periodicity on the magnitude of the induction and provides better agreement between the design calculations and experimental results. There are 5 figures and 5 references: 3 Soviet and 2 non-Soviet.

SUBMITTED: February 29, 1960

Fig.1. Legend.

Fig.1a. M - magnet,
S - pole-shoe,
1,2,3,4 - paths of the fluxes $\psi_1, \psi_2, \psi_3, \psi_4$, respectively.

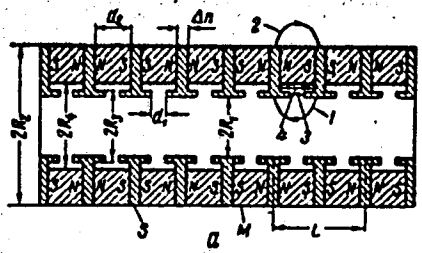
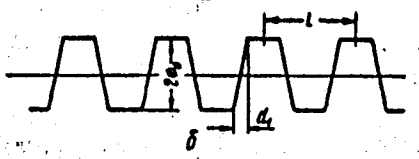


Fig.1b. Distribution of the magnetic potential at the radius $R = R_1$.



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Design of a Periodic ...

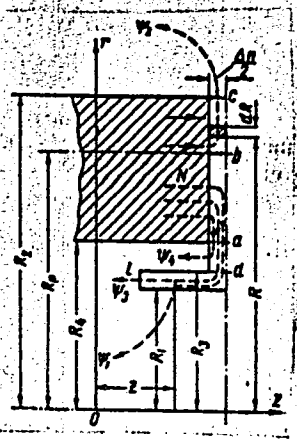

Fig. 3

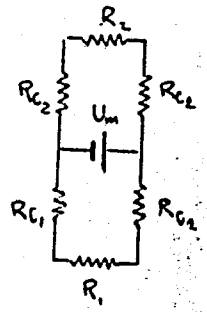

Fig.4.

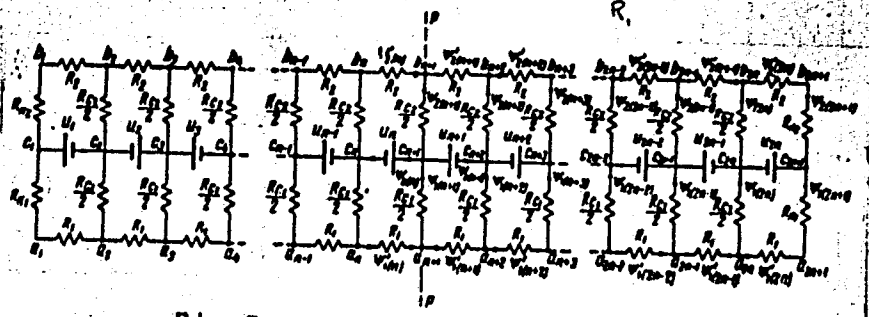

Fig.5.

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9,4230

S/109/61/006/004/013/025
E140/E163

AUTHOR: Igritskiy, A.L.

TITLE: The calculation of periodic electrostatic fields established by bifilar helices in TWT

PERIODICAL: Radiotekhnika i elektronika, Vol.6, No.4, 1961, pp. 613-622

TEXT: A method is given for calculating the electrostatic field in systems containing bifilar helices, intended for the periodic electrostatic focussing of solid and hollow electron beams in TWT. The author calculates the field within a bifilar helix, in an annular region bounded by a conducting cylinder and a bifilar helix, and an annular region bounded by two bifilar helices with identical and with differing pitches.

There are 4 figures and 6 references: 3 Soviet and 3 English.

SUBMITTED: June 6, 1960

Card 1/1

24468
S/109/61/006/006/009/016
D204/D303

9,4230

AUTHOR: Igritskiy, A.L.

TITLE: Focusing the electronic beam in traveling wave tubes with a periodic electrostatic field

PERIODICAL: Radiotekhnika i elektronika, v. 6, no. 6, 1961, 964 - 975

TEXT: A method of computing the trajectory of electrons in solid and hollow electron beams in periodic electrostatic fields is described. Conditions for optimal focusing are given, and it is shown that the periodic electrostatic field can be used as a "transformer" of the beam cross-section. The differential equation of the trajectory is derived and integrated for the hollow beam which is the more complicated case. This equation is an inhomogeneous Mathieu differential equation

$$\frac{d^2y}{dt^2} + (a - 2q\cos 2t)\,y = b + 2p\cos 2t. \qquad (18)$$

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Focusing the electronic ...

where the notations are as follows:

$$a = \pm\frac{\eta B_B^2}{8V_0}\left(\frac{L}{\pi}\right)^2, \tag{19}$$

$$2q = \left(\frac{L}{\pi}\right)^2\frac{V''(r_B)}{2V_0} - \frac{V(r_B)}{V_0} \pm \frac{3}{16}\frac{\eta B_B^2}{V_0}\frac{V(r_B)}{V_0}\left(\frac{L}{\pi}\right)^2, \tag{20}$$

$$b = \pm\left(\frac{L}{\pi}\right)^2\frac{\eta B_B^2}{8V_0}v_0^{1/2}, \tag{21}$$

$$2p = \left(\frac{L}{\pi}\right)^2 v_0^{1/2}\left[\frac{V'(r_B)}{2V_0 r_B} \mp \frac{5}{32}\frac{\eta B_B^2}{V_0}\frac{V(r_B)}{V_0}\right]. \tag{22}$$

and these coefficients are constant for any given trajectory with an input radius of $r = r_B$. The meaning of other symbols: B_B^2 is given by

$$B_B^2 = \frac{V^2 I_B}{\pi\varepsilon_0\eta^{1/2}V_0^{3/2}r_B^2}\left|\frac{r_B^2 - r_0^2}{r_0^2 - r_1^2}\right|. \tag{12}$$

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Focusing the electronic ...

where I_{π} is the total beam current, r_B is the input radius, r_e is the equilibrium radius where the space charge field is zero, r_0 is the external radius of the hollow beam, r_i is the internal radius of the hollow beam, η is the charge-to-mass ratio of the electron, V_0 is the mean potential of helices; L is the period of the electrostatic field. The stability graph of this Mathieu equation is given. A stable hollow beam is obtained when all electron trajectories are within this zeroth (n = 0) stability zone of the Mathieu equation. The general solution of this equation was obtained by the author previously (Ref. 5: Raschet trayektoriy elektronov v periodicheskom fokusiruyushchem ustroystve LBV, Radiotekhnika i elektronia, 1960, 5, 2, 255). It is concluded that a periodic electrostatic field of a length $z = L/\beta$ along the axis can act as a "cross-section transformer". Whether the cross-section of the beam is larger or smaller at the output than at the input is decided by a smaller or larger than optimum voltage between the turns of the helices. It can be shown that the periodic electrosta-

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Focusing the electronic ...

tic field can be used for focusing solid beams even with an ordinary electron gun, producing a single-velocity stream of electrons. To achieve this, a larger accelerating voltage must be used to shift the position of extreme radial displacement outside the helix. This result is novel, because so far, according to P.K. Tien (Ref. 7: Focusing of a long cylindrical electron stream by means of periodic electrostatic fields, J. Appl. Phys., 1954, 25, 10, 1281) it has been assumed that such focusing is impossible. Conclusions: 1) A method of trajectory calculation is given. It is shown that the electron flow is approximately laminar in the bi-periodic focusing unit. 2) Conditions for optimum focusing are given when the extreme electron trajectories are approximately parallel with the tube axis. It is shown that the optimal voltage for the external and internal extreme trajectories in the hollow beam are practically identical and, therefore, there is no need for different pitch and voltages in the inner and outer helices. 3) It is shown that a periodic electrostatic field of a given field strength can act as a transformer of the beam cross-section. At the

input and output of this transformer the electrons move approximately parallel to the axis of the tube. 4) For solid beams conditions are given to obtain small ripple of the trajectory. A function describing the variation of accelerating potential along the radius of a special electron gun for producing a stream parallel to the axis is given. It is shown that the periodic electrostatic focusing of a solid beam can be achieved also with an ordinary electron gun giving a single-velocity stream of electrons. There are 8 figures and 7 references: 3 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: K.K.N. Chang, Biperiodic electrostatic focusing for high-density electron beams, Proc. IRE, 1957, 45, 11, 1522; K.K.N. Chang, Confined electron flow in periodic electrostatic fields of very short periods, Proc. IRE, 1957, 45, 1, 66; K.K.N. Chang, An electrostatically focused travelling wave tube amplifier, RCA Rev., 1958, 19, 86; P.K. Tien, Focusing of a long cylindrical electron stream by means of periodic electrostatic fields, J. Appl. Phys., 1954, 25, 10, 1281.

SUBMITTED: April 6, 1960

Card 5/5

S/109/62/007/012/009/021
D266/D308

9.4230

AUTHOR: Igritskiy, A. L.

TITLE: Calculation of electron beam focussing with the aid of a periodic magnetic field in a travelling wave tube having a shielded cathode

PERIODICAL: Radiotekhnika i radioelektronika, v. 7, no. 12, 1962, 2043-2050

TEXT: The purpose of the paper is to find the electron trajectories in a periodic magnetic field and to choose the parameters of the field, and beam, in such a way which minimizes the scalloping. Assuming a magnetic field of the form

$$B_z = B_{z0} \sin \frac{2\pi}{L} z \qquad (1)$$

and proceeding in the same way as in a previous paper (Radiotekhnika

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i elektronika, v. 5, no. 2, 1960, 255) the author obtains a differential equation for the electron trajectories

$$r'' + \frac{\eta B_{zo}^2}{8\Phi} r \sin^2\left(\frac{2\pi}{L} z\right) = \frac{\eta}{8\Phi} \frac{\sqrt{2}\, I}{\pi \varepsilon_0 \eta^{3/2} \Phi^{1/2} r} \qquad (2)$$

where r, z - radial and axial coordinate of an electron, L - period of the magnetic field, Φ - d.c. voltage, I - beam current, η - charge to mass ratio of an electron, and ε_0 - the dielectric constant of vacuum. Assuming further that beam scalloping is small, a new variable is introduced, such that

$$r = r_{in} (1 + \delta) \qquad (3)$$

where r_{in} - input radius of an electron. Retaining only the linear terms in δ and putting $t = 2\pi z/L$

$$\frac{d^2\delta}{dt^2} + (a - 2q \cos 2t)\,\delta = -(b - 2q \cos 2t) \qquad (5)$$

The solution is obtained in closed form. The conditions of minimum scalloping are investigated. The general solution is simplified for this purpose by taking the first region of stability of the Mathieu equation. The optimum condition is

$$\frac{2q}{a - 4} = -\frac{b}{a} \qquad (35)$$

The trajectory in this case is:

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$$r = r_{in}(1 + \delta) = r_{in} - r_{in}\frac{b}{a}\left[1 + \cos\left(\frac{4\pi}{L}z\right)\right] \quad (38)$$

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The author also shows that this solution is superior to that obtained by J. T. Mendel, C. F. Quate and W. H. Yocom (Proc. IRE, 1954, 42, 5, 800). It is noted that the solution rapidly deteriorates if the electrons enter the field at an angle, so that care should be taken to ensure parallel entry. There are 2 figures.

SUBMITTED: December 19, 1961

IGRITSKIY, A. L.

Focusing of an electron beam at the input to a magnetic field of an output traveling-wave tube. Radiotekh. i elektron. 8 no.1:130-137 Ja '63. (MIRA 16:1)

(Traveling-wave tubes) (Microwaves)

IGRITSKIY, A.L.

Calculation of the trajectories of electrons in an electron gun at the input of a traveling-wave tube. Radiotekh. i elektron. 8 no.3:440-452 Mr '63. (MIRA 16:3)
(Traveling-wave tubes) (Microwaves)

68567

SOV/35-59-11-8981

3.1720

Translation from: Referativnyy zhurnal, Astronomiya i Geodeziya, 1959, Nr 11, p 45 (USSR)

AUTHOR: Ikhsanova, V.N.

TITLE: The Radio Emission From Corona Condensations on the 3.2 cm Wavelength, and Its Connection With the Visual Formations on the Sun

PERIODICAL: Solnechnyye dannyye, 1958 (1959), Nr 10, pp 65 - 68

ABSTRACT: Some results are cited of the observation material processing on radio emission from the sun, on the 3.2 cm wavelength, which were carried out systematically from December 1957 to May 1958, with the aid of a large radiotelescope in the Main Astronomical Observatory AS USSR (Pulkovo). The high resolution powers of the radio telescope in the azimuthal direction ($\sim$1!5) allowed, in the greater number of cases, to single out the radiation from the corona condensations connected with the groups of spots. Over each group of an area of 50 - 100·10^{-6}S$_\odot$ there is a condensation which produces noticeable radio emission. Examples are cited which correlate the dynamics of the development of the spot groups with the relative fluxes of radio emission, connected with the condensa-

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SOV/35-59-11-8981

The Radio Emission From Corona Condensations on the 3.2 cm Wavelength, and Its Connection With the Visual Formations on the Sun

tions during their movements across the sun's disc. Actually, radio emission arises simultaneously with the groups of spots. With the disintegration of a group the radiation diminishes and vanishes. The author draws the conclusion that the most durable flow of radio emission from the corona condensation, is connected with the group belonging to class F. Occurences of radio-emission from condensations appearing repeatedly on the suns disk have been observed. Bibl. 7 titles.

A.Ye. Salomonovich

Card 2/2

FRAKMAN, E.A.; POGORELKO, P.I.; IGRON, S.M. (Tashkent).

Activities of the Tashkent Urological Society in 1957. Urologiia 23 no.6:70-71 N-D '58. (MIRA 11:12)
(TASHKENT-UROLOGY--SOCIETIES)

KISELEV, S.N.; IGRUNKOVSKIY, M.T.

Universal machine for drilling oil drains in piston grooves. Biul. tekh.-ekon.inform. no.5:16-18 '58. (MIRA 11:7)
(Drilling and boring machinery)

MYAGKOV, M.I.; BOLOSHIN, N.N.; IGRUNOV, D.V.

Design, construction, and starting operations at Ore Dressing Plant No.2 of the Krivoy Rog Southern Mining and Ore Dressing Combine. Trudy Mekhanobr no.133:148-177 '63.

(MIRA 18:10)

KUZNETSOV, N.A., otv.red.; VITKOVSKIY, A.P., red.; BOZHENKO, Ye.F., red.; GAVRILENKO, I.G., red.; GRINEK, V.S., red.; IGRUNOV, N.S., red.; KRUPA, G.D., red.; RAZDOBARKIN, V.I., red.; RYABOKOBYLENKO, V.I., red.; SEMENOV, M.K., red.; CHEFRANOV, B.N., red.; FUNSHTEYN, D.A., red.; PETROPOL'SKAYA, O.A., red.

[Belgorod Boiler-Making Factory] Belgorodskii kotlostroitel'nyi. Voronezh, TSentral'noe-Chernozemnoe knizhnoe izd-vo, 1964. 185 p. (MIRA 18:7)

1. Belgorodskiy Gosudarstvennyy kotlostroitel'nyy zavod. 2. Direktor Belgorodskogo Gosudarstvennogo kotlostroitel'nogo zavoda (for Chefranov). 3. Nachal'nik byuro tekhnicheskoy informatsii i izobretatel'stva Belgorodskogo Gosudarstvennogo kotlostroitel'nogo zavoda (for Gavrilenko). 4. Glavnyy konstruktor spetsial'nogo konstruktorskogo byuro energeticheskikh kotlov Belgorodskogo Gosudarstvennogo kotlostroitel'nogo zavoda (for Semenov). 5. Zamestitel' glavnogo inzhenera Belgorodskogo Gosudarstvennogo kotlostroitel'nogo zavoda (for Ryabokobylenko).

BURKOVSKAYA, Ye.Kh., nauchnyy sotrudnik; IGRUNOV, V.D., nauchnyy sotrudnik; MECHAYEV, I.N., nauchnyy sotrudnik; BOBRIKOVA, V.N.; TERENT'YEVA, T.N.; SHCHERBAKOVA, L.F.; BERLIN, I.A., otv.red.; KITAYTSEV, A.M., red.; KUZ'MIN, L.A., red.; OLIMPOV, V.G., red.; SKITNYKIN, I.S., red.; RUSIN, N.P., red.; MARTYNOV, S.I., red.; SIMONOV, Ya.P., red.; IVANOV, A.P., red.; BESSONOV, N.P., red.; YASNOGORODSKAYA, M.M., red.; VLADIMIROV, O.G., tekhn.red.

[Directions for hydrometeorological stations and posts] Nastavlenie gidrometeorologicheskim stantsiiam i postam. Leningrad, Gidrometeor.

(Continued on next card)

BURKOVSKAYA, Ye.Kh.--(continued) Card 2.
izd-vo. No.3, pt.2. [Working up materials of meteorological ovservations] Obrabotka materialov meteorologicheskikh nabliudenii. 1958. 85 p. (MIRA 13:1)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. 2. Glavnaya geofizicheskaya observatoriya im. A.I.Voyeykova (for Burkovskaya, Igrunov, Nechayev). 3. Starshiye inzhenery Nauchno-issledovatel'skogo instituta aeroklimatologii (for Bobrikova, Terent'yeva). 4. Glavnoye upravleniye Gidrometeorologicheskoy sluzhby SSSR (for GUGMS) (for Kitaytsev, Kuz'min, Olimpov, Skiteykin). 5. Glavnaya geofizicheskaya observatoriya (GGO) (for Berlin, Nechayev, Rusin, Shcherbakova). 6. Upravleniye gidrometeorologicheskoy sluzhby (UGMS) (for Martynov, Simonov, Ivanov, Bessonov).

(Meteorology--Observers' manuals)

VOLOKH, V.G.; GUSHCHINA, M.V.; IGRUNOV, V.D.; NECHAYEV, I.N.; POKROVSKAYA, I.A.; TRIFONOVA, T.S.; TSYGANOVA, A.M.; RUSIN, N.P., otv.red.; KITAYTSEV, A.M., red.; KUZ'MIN, L.A., red.; OLIMPOV, V.G., red.; SKITEYKIN, I.S., red.; BERLIN, I.A., red.; NECHAYEV, I.N., red.; SHCHERBAKOVA, L.F., red.; MARTYNOV, S.I., red.; SIMONOV, Ya.P., red.; IVANOV, A.P., red.; BESSONOV, N.P., red.; YASNOGORODSKAYA, M.M., red.; VLADIMIROV, O.G., tekhn.red.

[Directions for hydrometeorological stations and posts] Nastavlenie gidrometeorologicheskim stantsiiam i postam. Leningrad, Gidrometeor.izd-vo. No.3, pt.1. [Observations at meteorological stations] Meteorologicheskie nabliudeniia na stantsiiakh. 1958. 223 p. (MIRA 12:12)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. 2. Sotrudniki Metodicheskogo otdela Glavnoy geofizicheskoy observatorii im. A.I.Voyeykova (for Volokh, Gushchina, Igrunov, Nechayev, Pokrovskaya, Trifonova, TSyganova). 3. Glavnoye upravleniye Gidrometeorologicheskoy sluzhby SSSR (GUGMS)(for Kitaytsev, Kuz'min, Olimpov, Skiteykin). 4. Glavnaya geofizicheskaya observatoriya (GGO) (for Berlin, Nechayev, Rusin, Sherbakova). 5. Mestnyye upravleniya Gidrometeorologicheskoy sluzhby (for Martynov, Simonov, Ivanov, Bessonov).

(Meteorology--Observations)

DASHKEVICH, L.L.; SURAZHSKIY, D.Ya.; USOL'TSEV, V.A.; AZBEL', M.Ye.; BOZHEVIKOV, S.N.; VORZHENEVSKIY, N.S.; MANUYLOV, K.N.; GLAZOVA, Ye.F.; KARPUSHA, V.Ye.; PROTOPOPOV, N.G.; SHADRINA, Ye.N.; IGRUNOV, V.D.; NECHAYEV, I.N.; BESPALOV, D.P.; ILLARIONOV, V.I.; GLEBOV, F.A.; GLAZOVA, Ye.F.; KAULIN, N.Ya.; GORYSHIN, V.I.; GAVRILOV, V.A.; TIMOFEYEV, M.P., retsenzent; YEFREMYCHEV, V.I., retsenzent; KRASOVSKIY, V.B., retsenzent; V'YUNNIK, A.P., retsenzent; STERNZAT, M.S., otv. red.; RUSIN, N.P., otv. red.; YASNOGORODSKAYA, M.M., red.; VOLKOV, N.V., tekhn. red.

[Instructions to hydrometeorological stations and posts] Nastavlenie gidrometeorologicheskim stantsiiam i postam. Leningrad, Gidrometeoroizdat. No.3. Pt.3. [Meteorological instruments and observation methods used on a hydrometeorological network] Meteorologicheskie pribory i metody nabliudenii, primeniaemye na gidrometeorologicheskoi seti. 1962. 295 p. (MIRA 15:5)

(Continued on next card)

DASHKEVICH, L.L.— (continued) Card 2.

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye gidrometeorologicheskoy sluzhby. 2. Glavnaya geofizicheskaya observatoriya Nauchno-issledovatel'skogo instituta gidrometeorologicheskikh priborov i Gosudarstvennogo gidrologicheskogo instituta (for Dashkevich, Surazhskiy, Usol'tsev, Azbel', Bozhevikov, Vorzhenevskiy, Mamylov, Glazova, Karpusha, Protopopov, Shadrina, Igrunov, Nechayev, Bespalov, Illarionov, Glebov, Glazova, Kaulin, Gorysnin, Gavrilov). 3. Komissiya Glavnogo upravleniya gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR (for Nechayev, Usol'tsev, Timofeyev, Yefremychev, Krasovskiy, V'yunnik)
(Meteorology)

IGRUTINOVIC, Dragan, geolog

Hydrologic characteristics of the Jasenica River basin. Vodoprivreda Jug 2 no.4/5:70-76 '59. (EEAI 9:10)

1. Asistent Instituta za vodoprivredu, Beograd.
(Serbia--Water)

IGUDESMAN, Ya. Ye.

Leather - Machinery

Mechanization of labor processes at the Minsk leather products factory., Leg. Prom., no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, March 1952. Unclassified.

IGUDESMAN, Yakov Yevgen'yevich; SHAVEL'SKI, Aleksandr Yevgen'yevich; TSYARESHCHANKA, Ul., redaktor; KARPINOVICH, tekhnicheskiy redaktor.

[Socialist competition in White Russian industry in the postwar years] Sotsyialistychnae spabornitstva u pramyslovastsi BSSR u nasliavaennyia gady. Minsk, Dziarsh. vyd-va BSSR. Red. palit. lit-ry, 1954. 84 p. (MLRA 8:2)
(White Russia--Industries) (Socialist competition)

AVROV, P.Ya.; BULEKBAYEV, Z.Ye.; GARETSKIY, R.G.; DAL'YAN, I.B.; IGUMENOV, V.M.; TSAREV, V.A.; SHLEZINGER, A.Ye.; YANSHIN, A.L., akademik

New gas-bearing region in the Ural Mountain region. Dokl. AN SSSR 162 no.2:393-396 My '65. (MIRA 18:5)

1. Institut geologicheskikh nauk AN KazSSR; Trest "Aktyubnefterazvedka"; Geologicheskiy institut AN SSSR i Aktyubinskaya geofizicheskaya ekspeditsiya.

AUTHOR: Kaganovich, I. M.; Potapenko, Yu. I.; Igumenshchev, Ye. D.

ORG: none

TITLE: Thermomechanical treatment of the VT14 alloy forging

SOURCE: Tsvetnyye metally, no. 10, 1965, 75-79

TOPIC TAGS: titanium, titanium alloy, aluminum containing alloy, molybdenum containing alloy, vanadium containing alloy, alloy forging, thermomechanical treatment, alloy thermomechanical treatment, alloy property/VT14 alloy

ABSTRACT: The possibility of lot producing VT14 titanium alloy die forgings with reproducible mechanical properties by applying thermomechanical treatment (TMT) has been investigated. Simple and intricately shaped specimens with a maximum thickness of 40 mm (VT14 alloy hardens to a depth of 15 mm) were die forged with reductions of 22—64% and brine quenched. It was found that TMT improves mechanical properties, especially ductility, and the reproducibility of the characteristics of elongation, reduction of area, and notch toughness. This improvement appears to be the result of the dispersion of structural components and of a great number of sliding planes formed in the process of deformation and uniformly distributed in the metal. It was found advisable to keep to a minimum the number of hammer blows so as to maintain a sufficiently high temperature of parts at the end of forging. From this viewpoint,

Card 1/2 UDC: 669.295:621.78

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ACC NR: AP5024862

it is preferable to use forging presses provided they are equipped with a rapid action ejector. Thermomechanical treatment with 20% reduction generally ensures sufficiently high properties in parts produced. Simply shaped parts can be obtained by conventional forging methods. Orig. art. has: 3 figures and 2 tables. [ND]

SUB CODE: MM, IE/ SUBM DATE: none/ ORIG REF: 001/ ATD PRESS: 4140

nw
Card 2/2

IGUMENTSEVA, V., inzh.-tekhnolog

Improve the quality of scourers. Mukomel.prom. 27 no.5:29 My '61. (MIRA 14:6)

1. Chelyabinskiy trest khlebopekarnoy promyshlennosti.
(Flour mills—Equipment and supplies)

IGUMNOV, A. I.

35884 Kristally smitsonita iz kochkarya.-v olg; A. N. Igumnov. Zapiski ural'skogo geol. vyp. 2, 1948, c. 28-30

SO: Letopis' Zhurnal'nykh Statey, No. 49, 1949

IGUMNOV, A.I., kand.med.nauk

Some features of the treatment of furunculosis under Arctic conditions.
Sov.med. 22 no.4:134-136 Ap '58 (MIRA 11:7)
(FURUNCULOSIS, ther.
in Arctic cond. (Rus))

IGUMOV, A.I.

Storage quality of Q fever antigen. Lab.delo 6 no.3:35-37 My-Je '60. (MIRA 13:7)
(Q FEVER) (ANTIGENS AND ANTIBODIES)

YAKOVLEV, A.I., doktor meditsinskikh nauk; IGUMNOV, A.I.

Use of luminescenal microscopy in microbiology. Voen.-med. zhur. no.11:41-45 N '61. (MIRA 15:6)
(MICROBIOLOGY)
(FLUORESCENCE MICROSCOPY)

IGUMNOV, A. K.

Treatment of psoriasis with mud from the Ugdan Lake. Vest. vener., Moskva no.4:42 July-Aug 1951. (CIML 21:1)

IGUMNOV, I.A. K.

Bullous dermatoses in septic malaria. Klin. med., Moskva 29 no.7:80-81 July 1951. (CIML 20:11)

1. Chita.

IGUMNOV, A.K.(Chita)

Case of chronic relapsing nocturnal urticaria. Vest.ven. i derm. no.3:51 My-Je '55. (MLRA 8:10)
(URTICARIA)

IGUMNOV, A.K., kandidat meditsinskikh nauk; YUSHKOV, N.P., starshyy ordinator

The ability of furuncle staphylococci to coagulate blood plasma.
Vest.ven. i derm. 30 no.2:46 Mr-Ap '56. (MLRA 9:7)
(STAPHYLOCOCCUS) (BLOOD--COAGULATION)

IGUMNOV, A.K.; YUSHKOV, N.P. (Chita)

Case of yellow chromhidrosis. Vest.ven. i derm. 30 no.4:57 Jl-Ag '56.
(LIVER--DISEASES) (MLRA 9:10)
(PERSPIRATION)

IGUMNOV, A. K., kand. med. nauk (Chita)

Observations on patients with alopecia areata under Arctic conditions. Vest. derm. i ven. 34 no.1:84-85 Ja '60. (MIRA 14:12)

(COLD—PHYSIOLOGICAL EFFECT) (BALDNESS)

IGUMNOV, A.K.

Capillaroscopic picture in patients with furunculosis. Vest. dermat. i ven. 35 no.3:24-27 Mr '61. (MIRA 14:4)
(FURUNCLE) (CAPILLARIES)

IGUMNOV, A.K., kand.med.nauk

Kimbarovskii's colored sedimentation reaction in furunculosis.
Zdrav. Bel. 7 no.8:44-45 Ag '61. (MIRA 15:2)

1. Iz kozhnogo otdeleniya okruzhnogo voyennogo gospitalya.
(FURUNCLE)

IGUMNOV, A. K., kand. med. nauk (Chita)

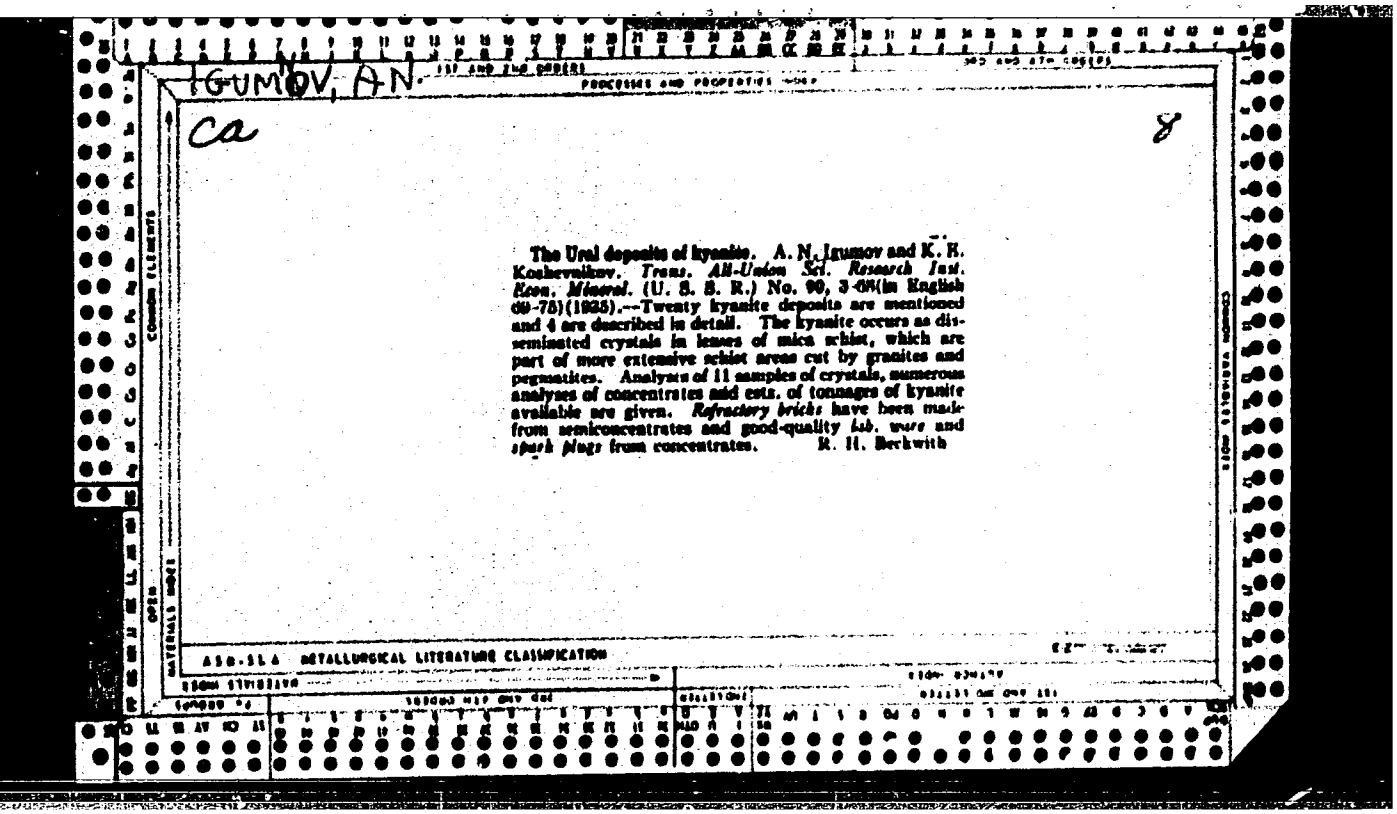
Peripheral blood of patients with furuncles and furunculosis.
Vest. derm. i ven. no.2:48-51 '62. (MIRA 15:2)

(FURUNCULOSIS) (BLOOD CELLS)

ABRAMOVICH, L.A., dotsent; IGUMNOV, A.K., kand. med. nauk; AHSMARIN, Yu.Ya., kand. med. nauk; GATKIN, Ye.D.; SERGEYEV, S.Ya.; YEFIMOV, M.L., kand.med. nauk.

Dermatologic casuistics. Vest. derm. i ven. 37 no.6:76-77 Je '63. (MIRA 17:6)

1. Klinika kozhnykh i venericheskikh bolezney, Chita (for Abramovich, Igumnov). 2. Kozhnoye otdeleniye Glavnogo voyennogo gospitalya imeni N.N. Burdenko (for Ashmarin). 3. Altayskiy kozhno-venerologicheskiy dispanser (for Gatkin). 4. Kafedra kozhnykh i venericheskikh bolezney, Semipalatinsk (for Sergeyev, Yefimov).



IGUMOV, A.N.

Ca

8

The Ural deposits of kyanite. A. N. Igumov and K. H. Kosherevskov. *Trans. All-Union Sci. Research Inst. Econ. Mineral.* (U. S. S. R.) No. 90, 3-68(in English 69-75)(1935).—Twenty kyanite deposits are mentioned and 4 are described in detail. The kyanite occurs as disseminated crystals in lenses of mica schist, which are part of more extensive schist areas cut by granites and pegmatites. Analyses of 11 samples of crystals, numerous analyses of concentrates and ests. of tonnages of kyanite available are given. *Refractory bricks* have been made from semiconcentrates and good-quality *lab. ware* and *spark plugs* from concentrates. R. H. Beckwith

A58-51A METALLURGICAL LITERATURE CLASSIFICATION

1A IGUMNOV, A-N.

The primary structure of vein quartz. A. N. Igumnov. *Doklady Akad. Nauk S.S.S.R.* 79, 309-11(1951).—[illegible] study of some hydrothermal deposits of the Urals observations were made on the primary structure of vein quartz. Microscopic study of coarse-grained vein quartz revealed a zonality consisting of fine bands. It was established that the growth of the crystals of vein quartz, particularly along the edge, proceeds by means of overgrowths of earlier formed cryst. individuals. Coarse-grained structures of quartz of hydrothermal veins precede more fine-grained structures. Development of giganto- and coarse-grained structures of quartz is a result of thorough going metamorphism of vein bodies and complete recrystn. of all the material.

Gladys S. Macy

IGUMNOV, A.N., kandidat meditsinskikh nauk; BURTKOVSKIY, I.E.

Ginseng therapy of eczema. Vest.ven.i derm. no.2:57 Mr-Ap '54.
(MLRA 7:4)

(Ginseng) (Eczema)

SHTEYNBERG, D.S., otv. red.; IGUMNOV, A.N., red.; PLOTNIKOV, S.N., red.; SOBOLEV, I.D., red.; PAVOKSKAYA, A.P., red. izd-va; SEREDKINA, N.F., tekhn. red.

[Guidebook for the Sverdlovsk excursion] Putevoditel' Sverdlovskoi ekskursii. Sverdlovsk, 1961. 135 p. (MIRA 14:8)

1. Ural'skoye petrograficheskoye soveshchaniye, 1st. (Sverdlovsk region—Geology—Field work)

IGUMNOV, A.N.

Structural features of variegated jasper from the Southern Urals. Trudy Gor.-geol. inst. UFAN SSSR no. 35:143-155 '60.
(MIRA 14:1)

(Ural Mountains--Jasper)

SHTEYNBERG, D.S., otv. red.; IGUMNOV, A.N., red.; LUKS, A.A., red.; MOKEN-SON, B.M., red.; LEVIN, V.Ya., red.; ARDASHNOVA, L.P., red. izd-va; SEREDKINA, N.F., tekhn. red.

[Guidebook for the field trip to the Vishnevyye Mountains, Karabash, and the Il'men Mountains] Putevoditel' ekskursii Vishnevye gory - Karabash - Il'menskie gory. Sverdlovsk, 1961. 62 p. (MIRA 14:8)

1. Ural'skoye petrograficheskoye soveshchaniye, 1st.
(Ural Mountains—Geology—Field work)

IGUMNOV, A.N., red.; OVCHINNIKOV, L.N., red.; SEMENIKHIN, A.I., red.; SHTEYNBERG, D.S., otv. red.; EBERGARDT, M.S., red. izd-va; SEREDKINA, N.F., tekhn. red.

[Guidebook for the Tagil-Kushva field trip] Putevoditel' Tagilo-Kushvinskoi ekskursii. Sverdlovsk, 1961. 128 p. (MIRA 14:8)

1. Ural'skoye petrograficheskoye soveshchaniye. 1st.
(Ural Mountains—Geology—Field work)

IGUMNOV, A.N.

One way of the formation of stylolites. Trudy Inst. geol. UFAN SSSR no.70:335-337 '65. (MIRA 18:12)

IGUMNOV, Al'bert Yakovlevich; KONOPLEVA, Tat'yana Mikhaylovna; BARAKS, A.M., red.

[Manual for the worker in a lumber drying shop] Posobie rabochemu lesosushil'nogo tsekha. Moskva, Lesnaia promyshlennost', 1965. 69 p. (MIRA 18:9)

IGUMNOV, B.A.

Substituting reinforced concrete ducts for small bridges. Put' i put.khoz. 7 no.9:15-16 '63. (MIRA 16:10)

1. Nachal'nik otdela inzhenernykh sooruzheniy sluzhby puti, Novosibirsk.

1. IGUMNOV, G.S.

2. USSR (600)

4. Technology

7. Low-capacity two-cycle engines with spontaneous combustion of the fuel through compression. Leningrad, Mashgiz, 1951

9. Monthly List of Russian Accessions, Library of Congress, February, 1953. Unclassified.

IGUMNOV, JURAJ

Dialkove symetricke kable s kordel-paperovou izolaciou na prenos 60 kanalov; signalizacna resers 74 zaznamov, 1948-1957.

Bratislava, Czechoslovakia, Utvar technickych informacii, 1957, 16p.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959.

Unclassified.

IGUMNOV, JURAJ

Pasivna ochrana kablov proti korozil, 109 zaznamov, 1937-1947.

Bratislava, Czechoslovakia, 1957, 27p.

Monthly List of East European Accessions (EEAI), LC, VOL. 8, No. 9, September 1959.

Unclassified.

IGUMNOV, JURAJ

Dialkove symetricke kable na prenos viac nez 60 kanalov; analyticka resers 27 zaznamov, 1949-1957.

Bratislava, Czechoslovakia, Utvar technickych informacii, 1957, 16p.

Monthly List of East European Accessions (EEAI,) LC, Vol 8, No. 9, September 1959.

Unclassified.

IGUMNOV, Juraj

Third Conference on Documentation in Ilmenau. Pošta org 19 no.4: 190 Ap '65.

1. Research Institute of Cables and Insulators, Bratislava.

IGUMNOV, K. S.

The general technology f flax; a textbook. Moskva, Gos. nauchno-tekhn. izd-vo tekstil., legkoi i poligr. promyshl., 1948. 173. p. (50-37355)

TS1725.P7

1. Flax. I. Igumnov, K. S.

IGUMNOV, M.K.

[redacted] thermos" for bitumen. [Suggested by M.K.Igumnov].
Rats. i izobr. predl. v stroi. no. 4:72-75 '57. (MIRA 11:8)

1. Brigadir parketchikov UNR-196 tresta Otdelstroy.
(Bitumen)

ACC NR: AP6025079 SOURCE CODE: UR/0115/66/000/006/0076/0078

AUTHOR: Igumnov, N. I.

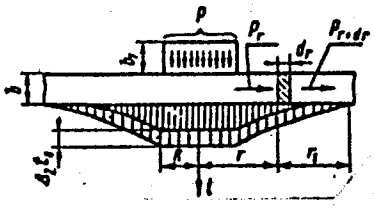
ORG: none

TITLE: Rate-of-flow thermal converter

SOURCE: Izmeritel'naya tekhnika, no. 6, 1966, 76-78

TOPIC TAGS: flow meter, thermal flow meter

ABSTRACT: Measuring the rate-of-flow of a liquid or pulp in a pipe by a thermistor and an external heater is considered. A constant thermal power P generated by the heater is transmitted, through the pipe wall, to the flow (see figure). The temperature field of the pipe depends on the geometric and thermophysical properties of the pipe wall and on the heat-exchange coefficient α. With certain simplifying assumptions, a general case is considered, and the relations between the thermistor temperature t and α are found for steady-state conditions. Laboratory tests of the above thermal-converter-type flowmeter have shown that, with a constant temperature (+15C) of flowing water, the flowmeter error is ± 1.5%; this error increases to ± 3% when the water temperature varies within 5—25C. Orig. art. has: 2 figures and 9 formulas.



SUB CODE: 13, 09 / SUBM DATE: none / ORIG REF: 003

Card 1/1 UDC: 531.767

IGUMNOV, S.A.; GLYUZMAN, A.M.

Computer for leveling the framework of fixed points in gravity prospecting. Izv.vys.ucheb.zav.; geol.i razv. 5 no.9:116-119 S '62. (MIRA 16:1)

1. Sverdlovskiy gornyy institut im. V.V.Vakhrusheva.
(Gravity prospecting)

ZAYEZZHEV, N.M.; BORISENKO, S.T.; IGUMNOV, S.A.; KABRIZON, V.M.; TYAZHLOV, G.T.; SEDENKO, M.V.

Preservation of underground waters in connection with the drainage of ore deposits. Razved. i okh. nedr. 30 no.11: 36-41 N '64. (MIRA 18:4)

1. Trest "Dneprogeologiya" (for all except Sedenko). 2. Dnepropetrovskiy gornyy institut (for Sedenko).

MIROLYUBOV, N.; IGUMNOV, V.

Archangel Provincial Veterinary Laboratory is 50 years old.
Veterinariia 41 no.3:8-11 Mr '65. (MIRA 18:4)

1. Glavnyy veterinarnyy vrach veterinarnogo otdela Arkhangel'skogo oblastnogo upravleniya proizvodstva i zagotovok sel'skokhozyaystvennykh produktov (for Mirolyubov). 2. Zaveduyushchiy radiologicheskim otdelom Arkhangel'skogo oblastnogo upravleniya proizvodstva i zagotovok sel'skokhozyaystvennykh produktov (for Igumnov).

IGUMNOV, Vasiliy Ivanovich; SHIRYAYEV, N.P., red.

[Toward far-away worlds] K dalekim miram. Moskva, Voenizdat, 1965. 139 p. (MIRA 18:8)

L 05668-67 EWP(m)/EEC(k)-2/EWT(1) TT/GW UR/

ACC NR: AM6000754 (A) Monograph

49
B+1

Igumnov, Vasiliy Ivanovich

Toward distant worlds (K dalekim miram) Moscow, Voyenizdat M-va obor. SSSR, 65. 139 p. illus. 18500 copies printed

TOPIC TAGS: interplanetary space , space flight

PURPOSE AND COVERAGE: This book intended to answer some questions concerning interplanetary flight, gives a popular presentation of modern views on the physical structure of the solar system and on interplanetary distances. It outlines the modern concept of the universe as applied to interplanetary flights and discusses design principles for future space vehicles intended for intergalactic flight.

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L 05668-67

ACC NR: AM6000754

On the threshold of interstellar flight — 88

For the glorious future of our planet — 137

SUB CODE: 22, 03/ SUBM DATE: 16Apr65

Card 2/2

SVEDE-SHVETS, M.I.; EYDUK, Yu.A.; YENINA, V.A.; VODOP'YANOVA, L.S.; TRUSHIN, Yu.V.; Prinimali uchastiye: DZENELADZE, Zh.O.; ZHUKOVA, Ye.A.; ISAKOVA, Z.S.; PUGACHEVA, V.P.; IGUMNOV, V.Ye.

Thermoelectric characteristics of sintered alloys based on tungsten and molybdenum. Sbor. trud. TSNNICHM no.30:7-16 '63. (MIRA 16:10)

(Tungsten-molybdenum alloys--Thermoelectric properties)

YAKOVLEV, I.L.; IGUMNOV, Ya.V.; ABRAMOV, A.A.

Centralized transportation and shipment operations. Tekst.prom. 16 no.2:54-55 F '56. (MLRA 9:5)

1. Starshiy inzhener Glavlenkhlopproma (for Yakovlev); 2. Nachal'nik transportno-ekspeditsionnoy bazy (for Igumnov); 3. Nachal'nik otdela ekspeditsii bazy (for Abramov).
(Shipment of goods)

ZIMIN, A.P., dotsent; Prinimali uchastiye: AKHLYUSTIN, V.K., kand.tekhn. nauk; DOBROBORSKIY, G.A., starshiy prepodavatel'; IGUMNOV, Yu.A., assistent; GORSHKOVA, N.G., insh.

Investigating the performance of industrial specimens of dump skips without skip dump tracks in the general mine hoisting systems; static analysis. Izv.vys.ucheb.zav.; gor.zhur. no.6:115-126 '59. (MIRA 13:4)

1. Sverdlovskiy gornyy institut imeni V.V.Vakhrusheva. Rekomendovana kafedroy gornoy mekhaniki.
(Mine hoisting)

S/180/61/000/006/009/020
E021/E135

AUTHORS: Korol'kov, A.M., and Igumnova, A.A. (Moscow)

TITLE: The surface tension of intermetallic compounds

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.6, 1961, 95-99

TEXT: The surface tension of alloy systems with phase diagrams forming chemical compounds was investigated. The initial materials had the following purity: Al - 99.99; Bi - 99.98; Cd - 99.95; Mg - 99.91 (0.06 Fe + Si); Pb - 99.99; Sb - 99.15 (0.7% Pb); Sn - 99.9; Te - 99.4 (0.25 Pb, 0.16 R_2O_3); Zn - 99.94-99.99%. The results of the surface tension measurements are shown in the table. The surface tension of the intermetallic compounds is usually less than that of the components (e.g. Mg_2Sn) or equal to that of the component with the lower value (e.g. Sb_2Te_3). The composition - surface tension diagram has either a minimum or a point of inflexion at the composition corresponding to the compound. This indicates that compounds are surface active in relation to both the components and these compounds are of the normal valency type Mg_2Me, or are surface

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PROSTAKOV, N.S.; MIKHEYEVA, M.M.; IGUMNOVA, A.V.; ZIMINA, G.I.

Substituted pyridines. 2,5-Dimethyl-4-[m,(o)-tolyl]pyridines and their conversions. Zhur.ob.khim. 30 no.7:2294-2297 Jl '60. (MIRA 13:7)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii. (Pyridine)

L 41029-66 EWT(m)/EWP(j)/T IJP(c) WW/DS/RM (A)
ACC NR: AP6022446 SOURCE CODE: UR/0069/66/028/002/0229/0233

AUTHOR: Igumnova, A. V.; Dogadkin, B. A.; Kuleznev, V. N.

ORG: Institute of Fine Chemical Technology im. M. V. Lomonosov, Moscow (Institut tonkoy khimicheskoy tekhnologii)

TITLE: The influence of branched structures on the physical-mechanical properties of vulcanized natural rubber

SOURCE: Kolloidnyy zhurnal, v. 28, no. 2, 1966, 229-233

TOPIC TAGS: natural rubber, gel, solid mechanical property, solid physical property

ABSTRACT: Samples of pale crepe rubber were extracted with hot acetone in darkness for 6 to 18 hr, then dried and plasticized in an environment devoid of free radical acceptors, to induce the formation of an insoluble gel (20 to 30% after 10 min). Also, samples of rubber vulcanized according to two different methods for 5 or 30 min at 143C were deformed on a rupture tester at 500 mm/min. Results indicate that the gel breaks down as plasticizing is prolonged and a microgel forms. The latter is capable of spontaneous dissolution. Since the mean molecular weight of the microgel-containing rubber is greater and its intrinsic viscosity is lower than those of the source material, the authors conclude that the microgel represents

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ACC NR: AP6022446

dense spherical particles of a strongly branched macromolecular spatial lattice. The presence of the microgel minimizes crystallization, so that the strength of the vulcanized rubber is reduced sharply as a result of poor compatibility with linear macromolecules, the deterioration of the peptizing environment and the increase in quantity of free macromolecular ends. In conclusion, the authors express their gratitude to workers of the department of colloidal chemistry N. M. Fodiman and A. N. Kamenskiy for performing the electron-microscopic investigations of the microgel. Orig. art. has: 1 table and 7 figures.

SUB CODE: 07/ SUBM DATE: 03May65/ ORIG REF: 002/ OTH REF: 010

Card 2/2 hs

RACHINSKIY, V.V., prof. doktor khim. nauk; IGUMNOVA, I.A.; SALDADZE, K.M.; TURCHAK, Ye.B.

Comparative determination of the absorption capacity of anion exchangers by using the weight, statical, isotope exchange, and radiochromatographic methods. Izv. TSKHA no.6:195-201 '64 (MIRA 18:1)

1. Kafedra prikladnoy atomnoy fiziki i radiokhimii Moskovskoy ordena Lenina sel'skokhozyaystvennoy akademii imeni K.A. Timiryazeva.

YEVSIOVICH, S.G.; ZHURAVLEV, S.I.; LYUBARETS, I.M. KOSOY, G.M.; IGUMNOVA, I.P. SUBBOTA, L.F.; GOLGER, Yu.S.

Industrial use of several methods of dressing Krivoy Rog iron ore in heavy suspensions. Gor.zhur. no.5:54-60 My '60. (MIRA 14:3)

1. Mekhanobr, Leningrad (for Yevsimovich and Zhuravlev). 2.Mekhanobrchermet, Krivoy Rog (for Lyubarets, Kosoy, Igumnova and Subbota). 3. Rudoupravleniye imeni Dzerzhinskogo (for Golger). (Krivoy Rog Basin—Ore dressing)

FLEROV, V.N.; SHCHEGOL', Sh.S.; ARMENSKAYA, L.V.; GALKIN, L.G.; Prinimali uchastiye: KALININA, R.N.; IGUMNOVA, N.N.

Electrolysis of hydrochloric acid solutions of cupric chloride. Zhur.prikl.khim. 33 no.10:2245-2252 O '60. (MIRA 14:5)
(Copper chloride)

IGUMNOVA, Z.S.; SHAMURIN, V.F.

Water balance of lichens and mosses in the tundra communities.
Bot. zhur. 50 no.5:702-709 My '65. (MIRA 18:10)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

DADYKIN, V.P.; IGUMNOVA, Z.S.

Amino acid content of aerial roots of corn [with English summary in insert] Fiziol.rast.3 no.3:259-262 My-Je '56. (MLRA 9:9)

1.Yakutskiy filial Akademii nauk SSSR, Yakutsk.
(Corn (Maize)) (Amino acids) (Roots (Botany))

IGUMNOVA, Z. S.

20-1-52/54

AUTHOR DADYKIN, V.P., STANKO, S.A., GORBUNOVA, G.S., and IGUMNOVA, Z.S.

TITLE Light Assimilation by Plants at Yakutsk and Tiksi (Ob usvoyenii sveta rasteniyami v Yakutske i Tiksi. Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 115, Nr 1 , pp 190-192 (U.S.S.R.)

ABSTRACT The idea of "optic assimilation" of plants of K.A. Timiryazev which was proved and developed especially by austrobotany, served as a starting point for the organization and realization of the research work on the optic characteristics of plants growing under different temperature conditions of air and soil. The experimental areas were at Yakutsk (62° North lat.) and Tixi (71,6° North lat.). The weather conditions are mentioned in table 1. The optical characteristics of the plants were found by means of the method of relative spectrophotometry using a quartz-spectrograph (Tikhov) with a resolving power of 1 : 2o and a linear dispersion in the area of K and H of 11,3 M/mm. The spectrographic work was carried out under natural conditions of growth with cloudless sky, at the moment of the highest position of the sun and with the exposure of 1o seconds. Fig. 1 shows all 3 reflection-, penetration- and absorption curves of solar energy through radies plants. The reflection curve at Yakutsk is higher than that of Tiksi. The energy reflection here is higher because of more favourable temperature conditions. An exception is formed by a narrow band of the

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spectrum in the λ 660 μ m zone where the reflection magnitude of Tiksi is greater than that of Yakutsk. Also the penetration curve through the leaves is in almost any part higher than that of Tixi. The greatest difference is to be found in the section of long ultra-violet, green, yellow and orangecolored rays. An exception is the narrow band of red rays (650 - 660 μ m) where the penetration in Tixi was greater than that of Yakutsk. The most interesting picture is demonstrated in the case of a comparison of the absorption of radiation energy. Almost over the whole wavediapason the plants of Yakutsk absorb remarkably less solar energy than those of Tiksi. The latter absorb 70 - 80 % even in the green part of the spectrum. The red-orange-yellow part is absorbed up to from 80 - 90 %. Especially significant is the absorption of the far red rays and of near infrared radiation which is classified as abiotic. Most essential seems the remarkably greater total absorption of solar ray energy by the plants of Tixi compared with those of Yakutsk. It proves a better utilization by plants growing under hard temperature conditions of air and soil. It seems probable that the reformation of bio-chemical processes in the internal part of the plants occurring under the influence of low outer temperature and accompanied by a change of the

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pigment apparatus makes a complete utilization of solar energy possible. It may be that it is just this energy of the plants that makes possible thewater absorption together with nutrition from a soil with very low temperature. Also the assimilation activity of the same plants was found. The daily production of dry substance was 1,5 times greater in the case of the Tixi plants than in the case of Yakutsk plants. Goncharik calls this "intensity of light nutrition" in the case of potatoes and cabbage. The spectrographic method made possible to interpret this intensity and to determine a complete utilization of sun rays by the plants of the high North, among it of the infrared part. (1 illustration, 2 tables and 5 Slavic references).

ASSOCIATION Yakutsk Branch of the Academy of Sciences of the U.S.S.R. (Yakutskiy filial Akademii nauk SSSR)
PRESENTED BY KURSANOV, A.L., Academician, April 29, 1957
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IGURA, Aleksander

Vesivo-vaginal fistula cured with electrocoagulation. Polski tygod. lek. 9 no.50:1604-1605 13 Dec 54.

1. Z Kliniki Urologicznej Akademii Medycznej w Warszawie; p.o. kierownika Kliniki: dr med. Jan Falkowski.

(FISTULA, VESICOVAGINAL, therapy, electrocoagulation)
(DIATHERMY, in various diseases, electrocoagulation of vesicovaginal fistula)

REKUNOV, N.A.; MIKHAYLOV, A.D.; DOMOKUROV, I.A.; NAZMUTDINOV, R.Sh.; IGUSHKIN, I.A.

SKS-8-59K seismic velocity logging station. Geofiz. razved. no.3:104-109 '61. (MIRA 17:2)

IHAROS, Gyula

Tardigrada of the waters and shore sectors of Lake Balaton. Annales biol Tihany 26:247-264 '59. (EEAI 10:1)
(Hungary--Tardigrada)